

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve

a5591

. A15

SOIL SURVEY INTERPRETATIONS FOR WOODLANDS

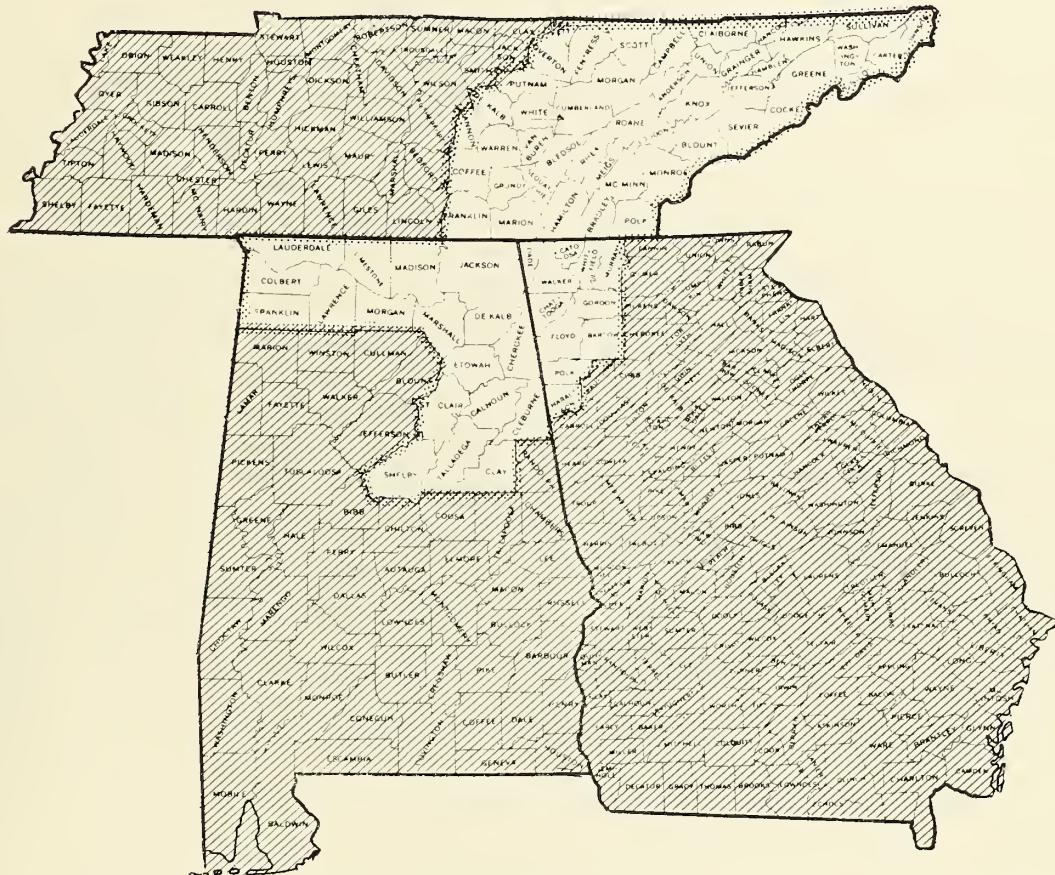
U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

IN THE

MAR - 11973

CUMBERLAND PLATEAU AND MOUNTAINS
AND THE SOUTHERN APPALACHIAN RIDGES AND VALLEY OF
ALABAMA, GEORGIA, AND TENNESSEE

CATALOGING - PREP.



PROGRESS REPORT W-11 --- MAY 1969

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

This report contains interpretations of soil surveys for woodland use and management in the Cumberland Plateau and Mountains and the Southern Appalachian Ridges and Valleys of Alabama, Georgia, and Tennessee. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth, management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners, and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of technical guides, soil handbooks, and published soil survey reports.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the woodusing industry, and others cooperated in gathering field data. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, includes some evaluations for individual soils. The soil series listed are those defined according to the current soil classification system and includes portions of soil associations mapped in low intensity surveys. In column one (1) erosion and texture phases were consolidated within a soil series where no differences in productivity, species suitability, or management problems existed.

Column two (2) includes a list of some of the commercially important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees. Priority between species will be influenced by local marketability and the owners' objectives, as well as the quality of wood products from a given species.

Column three (3) indicates the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (+) for each species where five or more plots were taken on the soils listed in column one. The site index curves used for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. An asterisk (*) following the site index rating indicates the rating is an estimate based on the same species on a similar soil, or by comparison with another species on the same soil. Site index is the average height of dominant trees at age 30 for cottonwood, age 35 for sycamore, and age 50 for all other species.

Column four (4) indicates the range of site index of the most important tree species in column two. The range of site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) evaluates the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth, and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the tree crop. A rating of slight indicates equipment use is seldom limited in

kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this physiographic area, as well as some of the important species listed in column two.

Column nine (9) shows the ordination of the soils into a woodland suitability group. A woodland suitability group is made up of kinds of soils that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3,

4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass x (stoniness or rockiness). Soils having restrictions or limitations for woodland use or management due to stones or rocks.

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or year long, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

Subclass d (restricted rooting depth). Soils with restrictions or limitations for woodland use or management due to restricted rooting depths. Soils shallow to hard rock, hardpan, or other layers in the soil that restrict roots are examples.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but includes flaggy soils.

Subclass r (relief or slope steepness). Soils with restrictions or limitations for woodland use or management due only to steepness of slope.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

Some kinds of soil may have more than one set of subclass characteristics.

Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

The numeral 4 indicates soils with no to slight management problems, and they are best suited for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management problems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

A fourth element, the letter e, has been used to ordinate some severely eroded soils with moderate to severe management problems into a separate "subgroup."

TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES
CUMBERLAND PLATEAU-APPALACHIAN VALLEY AND RIDGES

Indicator Forest Type or Species	:	1	2	:	3	:	4	:	5
	:	Very High	High	:	Moderately High	:	Moderate	:	Low
Site Index									
Cottonwood	:	(1): 106+	: 96-105:	86-95	:	76-85	:	75-	
Yellow-poplar	(2):	106+	: 96-105:	86-95	:	76-85	:	75-	
Sweetgum	(3):	96+	: 86-95	: 76-85	:	66-75	:	65-	
Water oaks	(4):	96+	: 86-95	: 76-85	:	66-75	:	65-	
Nuttall oak	(5):	96+	: 86-95	: 76-85	:	66-75	:	65-	
Loblolly pine	(6):	96+	: 86-95	: 76-85	:	66-75	:	65-	
Shortleaf pine	(6):	86+	: 76-85	: 66-75	:	56-65	:	55-	
Sou. red oak	(7):	86+	: 76-85	: 66-75	:	56-65	:	55-	
Eastern redcedar	(8):	66+	: 56-65	: 46-55	:	35-45	:	35-	
American sycamore	(9):	106+	: 96-105:	86-95	:	76-85	:	75-	
	:	:	:	:	:	:	:	:	

- (1) Broadfoot, W. M., 1960, Field Guide for Evaluating Cottonwood Sites, USFS Occ. Paper 178 (Fig. 4).
- (2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar-Southern Appalachians.
- (3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4).
- (4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-South, USFS Res. Paper SO-1 (Fig. 4).
- (5) Broadfoot, W. M., Unpublished manuscript, Sou. For. Expmt. Sta., 1966.
- (6) Coile, T. S. and F. X. Schumacher, Jour. For. 53:432-435 (Fig. 4 and 8).
- (7) Schnur, L. G., 1937, Yield, Stand and Volume Tables for Even-Aged Upland Oak Forests, USDA Tech. Bull. 560, Fig. 2.
- (8) TVA 1948, Site Curves, Eastern Redcedar, Tennessee Valley.
- (9) Briscoe, C. B. and M. D. Ferrill, 1958, Forestry Note 19, Louisiana State University.

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 1 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Albertville fine sandy loam to loam, 2 to 12% slopes	Loblolly pine Shortleaf pine Virginia pine Upland oaks	80+4 71+4 70* 70	71-84 66-76 59-82 65-75	Slight	Slight	Slight	Loblolly pine Virginia pine	3a7
fine sandy clay loam to clay, 2 to 12% slopes eroded	Loblolly pine Shortleaf pine Virginia pine	74+9 68+2 64	65-72 65-74 50-74	Slight	Moderate	Moderate		4c2
Alcoa silt loam to clay loam, 2 to 20% slopes	Yellow-poplar Upland oaks Shortleaf pine Virginia pine White pine Loblolly pine Black walnut	90* 70* 70* 70* 80* 80* -	86-95 66-75 66-75 66-75 76-85 76-85 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine Shortleaf pine	3a7
Allegheny silt loam to fine sandy loam 2 to 20% slopes	Yellow-poplar Upland oaks Black walnut White ash Sugar maple Black cherry White pine	100* 80* - - - - 90*	96-105 76-85 - - - - 86-95	Slight	Slight	Slight	Yellow-poplar Black walnut White pine	2a7
Allen fine sandy loam to clay loam, 2 to 20% slopes	Yellow-poplar Shortleaf pine Virginia pine Upland oaks	87 71+10 73 71	85-97 59-82 69-78 67-75	Slight	Slight	Slight	Yellow-poplar Shortleaf pine Virginia pine Loblolly pine Black walnut White pine	3a7
20 to 45% slopes	Eastern redcedar White ash Sugar maple	61 - -	56-65 - -	Moderate	Moderate	Slight		3r8
stony fine sandy loam to stony loam, 12 to 45% slopes	Black walnut Black cherry	- -	- -	Slight to Moderate	Moderate	Slight		3x8
Apison clay loam to fine sandy loam 2 to 20% slopes	Yellow-poplar Upland oaks Shortleaf pine Virginia pine Loblolly pine	90* 70* 70* 70* 80*	86-95 66-75 66-75 66-75 76-85	Slight	Slight	Slight	Shortleaf pine Loblolly pine	3a7
Armuchee silt loam, 2 to 20% slopes	Shortleaf pine Virginia pine Upland oaks Loblolly pine	60* 60* 60* 70*	56-65 56-65 56-65 66-75	Slight	Slight	Moderate to Severe	Virginia pine Loblolly pine	4d3
20 to 50% slopes	Eastern redcedar	40*	36-45	Moderate	Moderate	Moderate to Severe		
silty clay loam to silty clay. 5 to 20% slopes severely eroded	Shortleaf pine Virginia pine Loblolly pine Eastern redcedar	50* 50* 60* 30*	46-55 46-55 56-65 26-35	Moderate to Severe	Moderate to Severe	Severe	Virginia pine Loblolly pine	5d3

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 2 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Atkins silt loam to fine sandy loam 0 to 2% slopes	<u>Loblolly pine</u> <u>Sweetgum</u> Oaks Red maple Sycamore	86+5 94 80* - -	80-92 90-100 76-85 - -	Slight Severe Severe			Loblolly pine	2w9
Barbourville silt loam to fine sandy loam 0 to 12% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> <u>Loblolly pine</u> Shortleaf pine White pine Black cherry White ash Sugar maple Black walnut	100* 80* 90* 80* 90* - - - - -	96-105 76-85 86-95 76-85 86-95 - - - - -	Slight Slight Slight			Yellow-poplar Black walnut Loblolly pine White pine	2o7
Barfield silty clay loam to clay loam 2 to 30% slopes	<u>Eastern redcedar</u>	40+8	30-48	Moderate	Moderate	Moderate to Severe	Eastern redcedar	4d3
very rocky clay loam, 2 to 30% slopes			30*	26-35	Moderate	Severe		5x3
Beason silt loam, 0 to 2% slopes	<u>Yellow-poplar</u> Sweetgum White oak Red oaks <u>Loblolly pine</u>	90* 80* 70* 70* 80*	86-95 76-85 66-75 66-75 76-85	Slight	Moderate	Slight	Loblolly pine Sweetgum	3w8
Bodine Cherty silt loam, 5 to 20% slopes on all aspects and 20 to 40% slopes north aspect	Shortleaf pine <u>Yellow-poplar</u> <u>Upland oaks</u> Virginia pine Loblolly pine	58+11 91+17 69+8 70* 70*	48-76 79-123 55-79 65-75 66-75	Slight to Moderate	Slight to Moderate	Moderate	Loblolly pine Shortleaf pine	3f8
20 to 40% slopes south aspect and ridge tops	Virginia pine <u>Chestnut oak</u> Scarlet oak Eastern redcedar	60* 55* 55* 40*	56-65 50-60 50-60 36-45	Moderate	Moderate to Severe	Moderate to Severe	Virginia pine Eastern redcedar	4f3
Bolton loam to silt loam, 5 to 20% slopes	Shortleaf pine <u>Yellow-poplar</u> <u>Upland oaks</u> <u>Loblolly pine</u> White pine Virginia pine Black walnut	70* 90* 70* 80* 80* 70* -	66-75 86-95 66-75 76-85 76-85 66-75 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine White pine	3o7
20 to 45% slopes								3r8
silty clay loam to clay loam, 12 to 30% slopes severely eroded	<u>Loblolly pine</u> White pine Shortleaf pine Virginia pine	70* 70* 60* 60*	66-75 66-75 56-65 46-65	Moderate	Moderate to Severe	Moderate	Loblolly pine Shortleaf pine White pine Virginia pine	4c3e
Bradyville silt loam to silty clay loam 0 to 20% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> <u>Eastern redcedar</u> Hackberry Hickory Black walnut	90* 70* 50* - - -	86-95 66-75 46-55 - - -	Slight	Slight	Slight	Black walnut Loblolly pine Eastern redcedar	3o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 3 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Bruno</u> loamy fine sand to sandy loam, 0 to 5% slopes	<u>Bottomland oaks</u> Sweetgum Loblolly pine White pine Sycamore	80* 80* 80* 80* -	76-85 76-85 76-85 76-85 -	Slight	Moderate	Severe	Loblolly pine White pine	3s9
<u>Camp</u> silt loam, 0 to 12% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Shortleaf pine White pine Loblolly pine Black cherry White ash Sugar maple Black walnut	100* 80* 80* 90* 90* - - - -	96-105 76-85 76-85 86-95 86-95 - - - -	Slight	Slight	Slight	Black walnut Yellow-poplar White pine Loblolly pine	267
<u>Capshaw</u> silt loam to loam, 0 to 12% slopes	<u>Loblolly pine</u> <u>Yellow-poplar</u> Upland oaks	80* 90* 70*	76-85 86-95 66-75	Slight	Slight	Slight	Loblolly pine Shortleaf pine	3o7
<u>Captina</u> silt loam, 0 to 12% slopes	<u>Loblolly pine</u> <u>Yellow-poplar</u> Upland oaks Sweetgum	80* 90* 70* 80*	76-85 86-95 66-75 76-85	Slight	Slight	Slight	Loblolly pine	3o7
<u>Carbo</u> silt loam to silty clay loam 0 to 20% slopes	<u>Shortleaf pine</u> <u>Loblolly pine</u> <u>Eastern redcedar</u>	60* 65* 45*	56-65 60-70 40-50	Slight	Slight	Moderate	Loblolly pine Eastern redcedar	4c2
silty clay to clay, 0 to 20% slopes	<u>Eastern redcedar</u>	35*	30-40	Slight	Moderate	Severe	Eastern redcedar	5c3
very rocky silty clay to clay, 2 to 30% slopes	<u>Eastern redcedar</u>	35*	30-40	Slight	Severe	Moderate to Severe	Eastern redcedar	5x3
<u>Caylor</u> silt loam to loam, 2 to 20% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> <u>Shortleaf pine</u> White pine Black walnut	100* 80* 80* 90* -	96-105 76-85 76-85 86-95 -	Slight	Slight	Slight	Yellow-poplar Black walnut White pine Loblolly pine	2o7
<u>Chagrin</u> silt loam to gravelly silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks <u>Loblolly pine</u> Shortleaf pine Black walnut Black cherry White ash	100* 80* 90* 80* - - -	96-105 76-85 86-95 76-85 - - -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7
<u>Chewacla</u> silt loam to fine sandy loam 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks White pine Black walnut White ash	100* 80* 90* - -	96-105 76-85 86-95 - -	Slight	Moderate	Slight	Yellow-poplar White pine Black walnut Loblolly pine	2w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 4 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1) <u>Christian</u> silt loam to silty clay loam 2 to 20% slopes	(2) Shortleaf pine Loblolly pine White pine <u>Upland oaks</u> <u>Virginia pine</u>	(3) 66 80* 82 66 73	(4) 60-70 76-85 76-85 63-74 70-76	(5) Slight	(6) Slight	(7) Slight	(8) Loblolly pine Shortleaf pine Virginia pine	(9) 3o7
clay loam to clay, 5 to 20% slopes, severely eroded	<u>Virginia pine</u> Loblolly pine	60* 70*	56-65 66-75	Slight to Moderate	Moderate	Moderate to Severe	Loblolly pine Virginia pine	4c3e
<u>Claiborne</u> silt loam to cherty silt loam 5 to 20% slopes	<u>Yellow-poplar</u> <u>Shortleaf pine</u> Upland oaks Loblolly pine Black walnut	90 66 70* 80*	86-94 60-70 66-75 76-85	Slight	Slight	Slight	Yellow-poplar Black walnut Shortleaf pine Loblolly pine	3o7
20 to 30% slopes				Moderate	Slight	Slight		3r8
silty clay loam to cherty silty clay loam, 5 to 30% slopes, severely eroded	<u>Shortleaf pine</u> Virginia pine Loblolly pine	60* 60* 70*	56-65 56-65 66-75	Moderate	Severe	Moderate	Shortleaf pine Loblolly pine Virginia pine	4c3e
<u>Clymer</u> silt loam to sandy clay, 2 to 20% slopes	<u>Shortleaf pine</u> Upland oaks <u>Virginia pine</u> Loblolly pine	62* 64* 71* 69*	50-78 60-70 55-84 61-76	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	3o7
<u>Codorus</u> silt loam to fine sandy loam 0 to 5% slopes	<u>Yellow-poplar</u> Red oaks White pine White ash White oaks	100 80 90 - 70	96-105 76-85 86-95 - 66-75	Slight	Moderate	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2w8
<u>Colbert</u> silt loam to silty clay loam 0 to 20% slopes	<u>Shortleaf pine</u> <u>Loblolly pine</u> <u>Eastern redcedar</u>	60* 65-4 47	56-65 60-69 45-49	Slight	Moderate	Moderate	Loblolly pine Eastern redcedar	4c2
silty clay to clay, 5 to 20% slopes	<u>Eastern redcedar</u>	35*	30-40	Slight to Moderate	Moderate	Severe	Eastern redcedar	5c3
very rocky silty clay to clay, 0 to 30% slopes	<u>Eastern redcedar</u>	37+3	33-43	Slight	Severe	Moderate to Severe	Eastern redcedar	5x3
<u>Comus</u> loam to sandy loam, 0 to 5% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Loblolly pine Shortleaf pine White pine Black walnut White ash Black cherry	100* 80* 90* 80* 90*	96-105 76-85 86-95 76-85 86-95	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 5 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conasauga silt loam, 2 to 20% slopes	Shortleaf pine Virginia pine Loblolly pine Eastern redcedar	71 71 73+2 50*	68-74 56-65 69-74 46-55	Slight	Slight	Moderate	Loblolly pine	3c2
silty clay 5 to 20% slopes severely eroded	Loblolly pine Eastern redcedar	65*. 40*	60-70 36-45	Slight to Moderate	Moderate to Severe	Moderate to Severe	Loblolly pine Eastern redcedar	4c3e
Cotaco loam to fine sandy loam, 2 to 12% slopes	Yellow-poplar Upland oaks Loblolly pine White pine Sweetgum Black walnut	100* 80* 90* 90* 90* -	96-105 76-85 86-95 86-95 86-95 -	Slight	Moderate	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2w8
Crossville loam, 2 to 12% slopes	Shortleaf pine Virginia pine Loblolly pine White pine	60* 61+10 70* 70*	56-65 52-74 66-75 66-75	Slight	Slight	Slight	Shortleaf pine Virginia pine Loblolly pine White pine	4o1
Cumberland silt loam to siltyclay loam 2 to 20% slopes	Yellow-poplar Upland oaks Shortleaf pine Virginia pine Loblolly pine White pine Eastern redcedar Black walnut	90* 70* 70* 70* 80* 80* 50* -	86-95 66-75 66-75 66-75 76-85 76-85 46-55 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine White pine	3o7
silty clay or clay, 5 to 20% slopes, severely eroded	Virginia pine Loblolly pine Eastern redcedar White pine	60* 70* 40* 70*	56-65 66-75 36-45 66-75	Slight to Moderate	Moderate	Moderate to Severe	Loblolly pine Eastern redcedar White pine	4c3e
Dandridge silt loam to shaly silt loam 5 to 20% slopes	Upland oaks Virginia pine Eastern redcedar White pine	60 55* 40* 70	57-63 50-60 36-45 65-75	Slight	Moderate	Moderate to Severe	Virginia pine Eastern redcedar	4d3
silty clay loam to shaly silty clay loam, 5 to 45% slopes, severely eroded	Eastern redcedar	30*	26-35	Moderate to Severe	Severe	Moderate to Severe	Eastern redcedar	5d3
Decatur silt loam to gravelly silt loam, 2 to 20% slopes	Shortleaf pine Yellow-poplar Upland oaks Virginia pine Loblolly pine White pine Black walnut	66+4 90* 70* 70* 80* 80*	60-72 86-95 66-75 66-75 76-85 76-85 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine	3o7
20 to 30% slopes				Moderate	Moderate	Slight		3r8
silty clay loam to gravelly silty clay loam, 5 to 30% slopes, severely eroded	Loblolly pine Virginia pine Eastern redcedar White pine	72 60* 40* 70*	67-76 56-65 36-45 66-75	Moderate	Moderate to Severe	Moderate	Loblolly pine Eastern redcedar White pine	4c3e

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 6 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dewey silt loam, 2 to 20% slopes	Yellow-poplar Upland oaks <u>Shortleaf pine</u> Virginia pine Loblolly pine Eastern redcedar White pine Black walnut	90* 70* 73 70* 78 50* 80* -	86-95 66-75 66-78 66-75 70-85 46-55 76-85 -	Slight Slight Slight			Yellow-poplar Black walnut Loblolly pine White pine Shortleaf pine	3o7
20 to 30% slopes								3r8
silty clay loam 5 to 30% slopes severely eroded	<u>Loblolly pine</u> Virginia pine Eastern redcedar White pine	70* 60* 40* 70*	66-75 56-65 36-45 66-75	Moderate Moderate to Severe	Moderate	Moderate	Loblolly pine Eastern redcedar White pine	4c3e
Dowellton silt loam 0 to 5% slopes	Sweetgum Bottomland oaks Loblolly pine	80* 80* 80*	76-85 76-85 76-85	Slight	Severe	Severe	Loblolly pine Sweetgum	3w9
Dunmore silt loam to silty clay loam 2 to 20% slopes	Yellow-poplar Upland oaks <u>Shortleaf pine</u> Virginia pine Loblolly pine White pine Eastern redcedar Black walnut White ash	90* 70* 69+7 70* 80* 80* 50* -	86-95 66-75 58-81 66-75 76-85 76-85 46-55 -	Slight Slight Slight			Yellow-poplar Black walnut Shortleaf pine White pine Loblolly pine	3o7
20 to 30% slopes								3r8
very rocky silt loam to silty clay loam, 5 to 30% slopes								3x8
clay, 5 to 30% slopes, severely eroded	<u>Virginia pine</u> Loblolly pine White pine Eastern redcedar	60* 70* 70* 40*	56-65 66-75 66-75 36-45	Slight to Moderate	Moderate to Severe	Moderate	Loblolly pine Eastern redcedar White pine	4c3e
Dunning silty clay loam to silty clay, 0 to 5% slopes	Sweetgum Bottomland oaks <u>Loblolly pine</u> Green ash Cottonwood	90* 90* 90* - 100*	86-95 86-95 86-95 - 96-105	Slight	Severe	Severe	Loblolly pine Cottonwood Sweetgum	2w9
Egans silt loam to silty clay loam 0 to 5% slopes	Yellow-poplar Upland oaks Bottomland oaks <u>Loblolly pine</u> Black walnut	100* 80* 90* 90* -	96-105 76-85 86-95 86-95 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7
Elkins silt loam, 0 to 2% slopes	Yellow-poplar Bottomland oaks Loblolly pine Sweetgum Red maple	86 94 90* 90* -	82-92 89-99 86-95 86-95 -	Slight	Severe	Severe	Loblolly pine	2w9
Elliber cherky silt loam 12 to 20% slopes	Shortleaf pine <u>Yellow-poplar</u> Upland oaks Virginia pine	70* 90* 70* 70*	66-75 86-95 66-75 66-75	Slight to Moderate	Slight	Moderate	Shortleaf pine White pine	3f8
20 to 40% slopes north aspect	White pine	80*	76-85					
20 to 40% slopes south aspects and ridge tops	<u>Shortleaf pine</u> Virginia pine Upland oaks	60* 60* 60*	56-65 56-65 56-65	Moderate to Severe	Moderate to Severe	Moderate to Severe	Shortleaf pine Virginia pine	4f3

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 7 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Emory</u> silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks <u>Loblolly pine</u> White pine Black walnut White ash Black cherry	104 80* 90* 90*	91-118 76-85 86-95 86-95	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2o7
<u>Enders</u> silt loam to silty clay loam 2 to 20% slopes	<u>Shortleaf pine</u> <u>Loblolly pine</u> Virginia pine	58+8 74 65*	50-68 71-77 60-70	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1
20 to 30% slopes				Moderate	Moderate	Slight		4r2
silty clay to clay, 5 to 20% slopes, eroded	<u>Loblolly pine</u> Shortleaf pine <u>Virginia pine</u> Eastern redcedar	70* 60* 60* 40*	66-75 56-65 56-65 36-45	Moderate	Moderate	Moderate to Severe	Loblolly pine Virginia pine Eastern redcedar	5c3
<u>Ennis</u> silt loam to cherty silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine White pine Black walnut Black cherry White ash	100+8 80* 90* 90*	92-115 76-85 86-95 86-95	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2o7
<u>Etowah</u> silt loam to cherty silty clay loam, 2 to 12% slopes	<u>Yellow-poplar</u> Upland oaks <u>Loblolly pine</u> Shortleaf pine Black walnut	90* 80* 90* 80* -	86-95 76-85 86-95 76-85 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine	2o7
<u>Farragut</u> silt loam to silty clay loam 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks <u>Shortleaf pine</u> Loblolly pine White pine Virginia pine Eastern redcedar Black walnut	90* 70* 70* 80* 80* 70* 50* -	86-95 66-75 66-75 76-85 76-85 66-75 46-55 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine White pine	3o7
clay, 5 to 20% slopes, severely eroded	<u>Loblolly pine</u> <u>Virginia pine</u> White pine Eastern redcedar	70* 60* 70* 40*	66-75 56-65 66-75 36-45	Moderate	Moderate to Severe	Moderate to Severe	Loblolly pine Virginia pine White pine Eastern redcedar	4c3e
<u>Fullerton</u> silt loam to cherty silt loam 5 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine Shortleaf pine Virginia pine	90+10 70+5 74+6 67+5 68+6	76-100 63-78 66-83 60-77 61-78	Slight	Slight	Slight	Shortleaf pine Loblolly pine Virginia pine White pine	3o7
20 to 45% slopes	Eastern redcedar White pine	50* 80*	46-55 76-85	Moderate	Moderate	Slight		3r8
cherty silty clay loam, 12 to 45% slopes, severely eroded	<u>Loblolly pine</u> Virginia pine Eastern redcedar White pine	70* 60* 40* 70*	66-75 56-65 36-45 66-75	Slight to Severe	Moderate to Severe	Moderate to Severe	Loblolly pine Virginia pine Eastern redcedar White pine	4c3e
30 to 45% slopes south aspect and ridge tops								4r2

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 8 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Gilpin</u> silt loam to loam, 5 to 20% slopes ----- 20 to 45% slopes north aspects	<u>Shortleaf pine</u> <u>Virginia pine</u> Upland oaks Loblolly pine White pine Yellow-poplar	65+8 72+8 70* 80* 80* 90*	51-81 59-87 66-75 76-85 76-85 86-95	Slight Slight Slight Slight Slight			Shortleaf pine Virginia pine Loblolly pine White pine	3o7 3r8
20 to 45% slopes south aspects	<u>Shortleaf pine</u> <u>Virginia pine</u> Upland oaks Loblolly pine	60* 60* 60* 70*	56-65 56-65 56-65 66-75	Moderate Moderate Moderate	Moderate	Moderate		4r2
<u>Greendale</u> silt loam to cherty silt loam, 0 to 12% slopes ----- 20 to 30% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine <u>Loblolly pine</u> Black walnut Black cherry Sugar maple White ash	100* 80* 80* 90* - - - -	85-105 70-85 70-85 80-95	Slight Slight Slight			Yellow-poplar Black walnut Loblolly pine Shortleaf pine	2o7
<u>Groseclose</u> silt loam to silty clay loam 2 to 20% slopes ----- 20 to 30% slopes	<u>Yellow-poplar</u> Upland oaks <u>Shortleaf pine</u> Virginia pine Loblolly pine White pine Eastern redcedar Black walnut White ash Sugar maple	90* 70* 70* 70* 80* 80* 50* - - -	86-95 66-75 66-75 66-75 76-85 76-85 46-55	Slight Slight Slight	Moderate Moderate	Slight	Yellow-poplar Black walnut Shortleaf pine White pine Loblolly pine	3o7 3r8
clay, 5 to 30% slopes, severely eroded	<u>Virginia pine</u> Loblolly pine White pine Eastern redcedar	60* 70* 70* 40*	56-65 66-75 66-75 36-45	Slight to Moderate Severe	Moderate	Moderate	Loblolly pine Eastern redcedar White pine	4c3e
<u>Hamblem</u> silt loam to fine sandy loam 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine	100* 80* 90*	96-105 76-85 86-95	Slight Moderate	Moderate	Slight	Loblolly pine Yellow-poplar	2w8
<u>Hartsells</u> loam to fine sandy loam, 2 to 20% slopes	<u>Shortleaf pine</u> <u>Virginia pine</u> Loblolly pine	62+7 72+8 72+7	55-67 55-84 61-80	Slight Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	4o1
<u>Holston</u> loam to gravelly loam, 2 to 20% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Shortleaf pine Loblolly pine Virginia pine	86+3 78+6 69+7 85* 73	80-94 70-85 61-80 80-90 70-80	Slight Slight Slight	Slight	Slight	Yellow-poplar Loblolly pine Virginia pine Shortleaf pine Black walnut	3o7
<u>Humphreys</u> silt loam to gravelly silt loam, 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine Loblolly pine Black walnut	101 70* 70* 90* -	84-110 66-75 66-75 85-95 -	Slight Slight Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 9 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Huntington</u> silt loam to gravelly silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks <u>Loblolly pine</u> Shortleaf pine Black walnut Black cherry White ash	100* 80* 90* 80*	96-105 76-85 86-95 76-85	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7
<u>Jefferson</u> silt loam to fine sandy loam 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks <u>Shortleaf pine</u> Loblolly pine <u>Virginia pine</u>	90* 64+4 66+10 77+5 73+7	86-95 63-70 55-75 70-85 65-87	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine Virginia pine	3o7
20 to 30% slopes	Black walnut White ash Sugar maple	- - -	- - -	Moderate	Moderate	Slight		3r8
cobbly loam to very stony loam 5 to 30% slopes				Slight to Moderate	Moderate	Slight		3x8
<u>Johnsburg</u> silt loam, 0 to 5% slopes	Upland oaks Virginia pine <u>Loblolly pine</u> Sweetgum Red maple	70* 70* 82+4 80*	66-75 66-75 76-88 76-85	Slight	Moderate	Moderate	Loblolly pine	3w8
<u>Landisburg</u> silt loam to cherty silt loam 0 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine Shortleaf pine Virginia pine	90* 70* 85* 70* 70*	86-95 66-75 80-90 66-75 66-75	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	3o7
<u>Leadvale</u> silt loam, 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks <u>Loblolly pine</u> Shortleaf pine Virginia pine	90* 64+9 77+5 66 70*	86-95 60-70 68-81 60-70 66-75	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	3o7
<u>Lee</u> silt loam to cherty silt loam 0 to 5% slopes	<u>Yellow-poplar</u> Red oaks White oaks Sweetgum Loblolly pine	100* 80* 80* 90* 90*	96-105 76-85 86-95 86-95 86-95	Slight	Severe	Severe	Loblolly pine 1/ Sweetgum 1/	2w9
<u>Lehew</u> loam to fine sandy loam, 5 to 20% slopes all aspects, and 20 to 45% slopes north and east aspects	Upland oaks <u>Loblolly pine</u> <u>Shortleaf pine</u> Virginia pine White pine	60* 70* 60* 65* 70*	56-65 66-75 56-65 60-70 66-75	Slight to Moderate	Slight to Moderate	Moderate	Loblolly pine Shortleaf pine Virginia pine White pine	4f3
20 to 45% slopes south and west aspects	<u>Loblolly pine</u> Shortleaf pine <u>Virginia pine</u> White pine	60* 50* 55* 60*	56-65 46-55 50-60 56-65	Severe	Moderate	Severe	Loblolly pine Shortleaf pine Virginia pine	5f3

1/ Tree planting is feasible only on areas with better than average surface drainage.

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 10 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1) <u>Lickdale</u> silt loam to silty clay loam 0 to 5% slopes	(2) <u>Red oaks</u> Sweetgum Loblolly pine Red maple	(3) 70* 80* 80* -	(4) 66-75 76-85 76-85 -	(5) Slight	(6) Severe	(7) Severe	(8) Loblolly pine	(9) 3w9
<u>Linside</u> silt loam to cherty silt loam 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine Sweetgum Black walnut	100* 80* 90* 90* -	96-105 76-85 86-95 86-95 -	Slight	Moderate	Slight	Yellow-poplar Black walnut Loblolly pine	2w8
<u>Linker</u> loam to fine sandy loam, 0 to 20% slopes	<u>Shortleaf pine</u> <u>Loblolly pine</u> Upland oaks <u>Virginia pine</u>	65+7 68+6 62+7 72+9	58-73 60-74 52-73 62-83	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	4o1
<u>Litz</u> silt loam to loam, 5 to 30% slopes	Yellow-poplar Upland oaks Loblolly pine Shortleaf pine <u>Virginia pine</u>	80* 70* 75* 67+4 73	76-85 66-75 70-80 60-70 67-79	Slight to Moderate	Slight to Moderate	Moderate	Loblolly pine Shortleaf pine Virginia pine	3f8
shaly silty clay loam, 5 to 20% slopes, severely eroded	Loblolly pine Shortleaf pine <u>Virginia pine</u>	65* 60* 60*	60-70 56-55 56-68	Slight	Moderate	Moderate to Severe	Loblolly pine Virginia pine	4c3e
<u>Lobelville</u> silt loam to cherty silt loam 0 to 5% slopes	<u>Yellow-poplar</u> Red oaks Loblolly pine Black walnut White oaks	94 76 90* - -	82-110 71-83 86-95 - -	Slight	Moderate	Slight	Yellow-poplar Black walnut Loblolly pine	2w8
<u>Melvin</u> silt loam, 0 to 2% slopes	Yellow-poplar Upland oaks <u>Loblolly pine</u> Bottomland oaks Sweetgum White pine Green ash	90* 80* 90* 90* 90* 90* -	86-95 76-85 86-95 86-95 86-95 86-95 -	Slight	Severe	Severe	Loblolly pine Sweetgum	2w9
<u>Minvale</u> silt loam to cherty silt loam, 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine Loblolly pine Virginia pine Black walnut	89+8 62 73 80* 70*	74-96 58-65 65-78 76-85 66-75 -	Slight	Slight	Slight	Yellow-poplar Black walnut Shortleaf pine Loblolly pine	3o7
<u>Monongahela</u> silt loam to gravelly loam 0 to 12% slopes	Yellow-poplar Upland oaks Shortleaf pine <u>Loblolly pine</u> Virginia pine White pine	90* 73+6 70* 81+6 70* 80*	86-95 64-82 65-75 70-88 65-75 76-85	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine White pine	3o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 11 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Montevallo</u> shaly silt loam 20 to 20% slopes	<u>Loblolly pine</u> <u>Shortleaf pine</u> <u>Virginia pine</u> White pine	64+11 63+7 56+8 70*	52-89 51-75 46-72 66-75	Slight to Moderate Moderate to Severe	Slight Moderate	Moderate to Severe	Loblolly pine Shortleaf pine Virginia pine White pine	4d3
20 to 45% slopes north and east exposures				Moderate to Severe		Moderate to Severe		
20 to 45% slopes south and west exposures	<u>Loblolly pine</u> Shortleaf pine Virginia pine	60* 50* 50*	56-65 46-55 46-55	Moderate to Severe	Moderate	Severe	Loblolly pine Virginia pine	5d3
<u>Mullins</u> silt loam, 0 to 2% slopes	<u>Bottomland oaks</u> <u>Sweetgum</u> <u>Loblolly pine</u> Red maple	90* 90* 90* -	86-95 86-95 86-95 -	Slight	Severe	Severe	Loblolly pine	2w9
<u>Muse</u> silt loam to silty clay loam 5 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine <u>Loblolly pine</u> Virginia pine Black walnut White pine	90* 70* 59 76 62+3 - 80*	86-95 66-75 66-75 76-85 66-75 76-85	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine White pine	3o7
silty clay, 5 to 20% slopes, eroded	<u>Loblolly pine</u> Virginia pine White pine	70* 60* 70*	66-75 56-65 66-75	Slight	Moderate	Moderate	Loblolly pine Virginia pine	4c3e
<u>Muskingum</u> silt loam to fine sandy loam 5 to 20% slopes	<u>Yellow-poplar</u> Upland oaks <u>Shortleaf pine</u> <u>Loblolly pine</u> Virginia pine White pine	80* 60* 60* 70* 60* 70*	76-85 56-65 56-65 66-75 56-65 66-75	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine White pine	4o1
20 to 45% slopes north and east aspect				Moderate	Moderate	Slight		4r2
20 to 45% slopes south and west aspects and ridge tops	<u>Shortleaf pine</u> Loblolly pine Virginia pine White pine	50* 60* 50* 60*	46-55 56-65 46-55 56-65	Moderate to Severe	Moderate to Severe	Moderate		5r3
stony loam, 5 to 45% slopes				Slight to Severe	Slight to Severe	Slight to Moderate		5x3
<u>Needmore</u> silt loam, 2 to 12% slopes	Upland oaks <u>Shortleaf pine</u> Virginia pine Eastern redcedar	70* 70* 70* 50*	66-75 66-75 66-75 46-55	Slight	Slight	Moderate	Loblolly pine Shortleaf pine Virginia pine	3c2
silty clay loam 2 to 12% slopes severely eroded	<u>Virginia pine</u> <u>Eastern redcedar</u>	60* 40*	56-65 36-45	Slight	Moderate	Moderate to Severe	Loblolly pine Virginia pine Eastern redcedar	4c3e

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 12 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1) Neubert loam, 0 to 12% slopes	(2) <u>Yellow-poplar</u> Upland oaks Shortleaf pine Loblolly pine Virginia pine Black walnut Black cherry White ash	(3) 100* 80* 80* 90* 80* - - -	(4) 96-105 76-85 76-85 86-95 76-85 - - -	(5) Slight	(6) Slight	(7) Slight	(8) Yellow-poplar Black walnut Loblolly pine	(9) 2o7
Newark silt loam, 0-2% slopes	<u>Loblolly pine</u> Bottomland oaks Green ash Sweetgum	90* 90* - 90*	86-95 86-95 - 86-95	Slight	Moderate	Slight	Loblolly pine Sweetgum Cottonwood	2w8
<u>Nolichucky</u> silt loam to gravelly fine sandy loam, 2 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine Loblolly pine Virginia pine <u>White pine</u>	90* 70* 70* 80* 70* 80	86-95 66-75 66-75 76-85 66-75 76-85	Slight	Slight	Slight	Shortleaf pine Loblolly pine White pine	3o7
----- 20 to 30% slopes				Moderate	Moderate	Slight		3r8
Philo silt loam to fine sandy loam 0 to 5% slopes	<u>Loblolly pine</u> Yellow-poplar Upland oaks Shortleaf pine Sweetgum White pine	84+6 100* 80* 80 90* 90*	78-91 96-105 76-85 76-85 86-95 86-95	Slight	Moderate	Slight	Loblolly pine Yellow-poplar White pine Cottonwood	2w8
Pope silt loam to gravelly fine sandy loam, 0 to 5% slopes	<u>Yellow-poplar</u> Upland oaks Shortleaf pine Loblolly pine Virginia pine White pine Black walnut	103 80* 80* 90* 74+5 90* -	96-105 76-85 76-85 86-95 71-80 86-95 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2o7
Purdy silt loam to fine sandy loam 0 to 5% slopes	<u>Bottomland oaks</u> Sweetgum Loblolly pine Upland oaks Green ash	90* 90* 90* 80* -	86-95 86-95 86-95 76-85 -	Slight	Severe	Severe	Loblolly pine Sweetgum	2w9
<u>Ramsey</u> loam to fine sandy loam, 5 to 20% slopes	<u>Upland oaks</u> Shortleaf pine Virginia pine Loblolly pine White pine	61+19 59+7 66 73+6 70*	46-80 50-69 61-76 60-81 66-75	Slight	Slight	Moderate to Severe	Virginia pine Shortleaf pine White pine Loblolly pine	4d3
----- 20 to 70% slopes north and east aspect				Moderate to Severe	Moderate to Severe	Moderate		
----- stony loam to very stony loam 20 to 70% slopes north and east aspect				Moderate to Severe	Moderate to Severe	Moderate		4x3

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 13 of 16

Cumberland Plateau and Southern Appalachians

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ramsey (continued)								
loam to fine sandy loam, 20 to 70% slopes south and west aspects	Upland oaks Shortleaf pine Virginia pine Loblolly pine White pine	50* 50* 50* 60* 60*	46-55 46-55 46-55 56-65 56-65	Moderate to Severe	Moderate to Severe	Moderate	Virginia pine Shortleaf pine Loblolly pine	5d3
stony loam to very stony loam 20 to 70% slopes south and west aspect				Moderate to Severe	Moderate to Severe	Moderate		5x3
Robertsville silt loam 0 to 2% slopes	Yellow-poplar Upland oaks Loblolly pine Bottomland oaks Sweetgum Red maple	100* 75* 80* 90* 90* -	96-105 70-80 76-85 86-95 86-95 -	Slight	Severe	Severe	Loblolly pine Sweetgum	2w9
Sequatchie silt loam to gravelly fine sandy loam, 2 to 20% slopes	Yellow-poplar Upland oaks Loblolly pine Black walnut White ash Sugar maple Black cherry	100* 80* 90* - - - -	96-105 76-85 86-95 - - - -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7
Sequoia silt loam to silty clay loam 2 to 20% slopes	Upland oak Loblolly pine Shortleaf pine Virginia pine	70* 83 63+8 71	66-75 78-87 52-79 67-77	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	3o7
silty clay to clay, 2 to 20% slopes, severely eroded	Loblolly pine Shortleaf pine Virginia pine Eastern redcedar	70* 55* 60* 40*	66-75 50-60 56-75 36-45	Slight	Moderate to Severe	Moderate	Loblolly pine Virginia pine Eastern redcedar	4c3e
Shouls silt loam to silty clay loam 2 to 20% slopes 20 to 30% slopes	Yellow-poplar Upland oaks Shortleaf pine Loblolly pine Virginia pine White pine Black walnut	90* 70* 70* 80* 70* 80* -	86-95 66-75 66-75 76-85 66-75 76-85 -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine White pine	3o7 3r8
Staser loam to gravelly fine sandy loam 0 to 5% slopes	Yellow-poplar Upland oaks Loblolly pine Black walnut White ash Sugar maple Black cherry	100* 80* 90* - - - -	96-105 76-85 86-95 - - - -	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine	2o7
Taft silt loam, 2 to 5% slopes	Yellow-poplar Upland oaks Loblolly pine Sweetgum Shortleaf pine	90* 61 85* 80* 60	86-95 56-63 80-90 76-85 56-63	Slight	Moderate	Moderate	Loblolly pine	3w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 14 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Talbott</u> silt loam to silty clay loam 2 to 20% slopes	Upland oaks <u>Loblolly pine</u> <u>Shortleaf pine</u> Virginia pine Eastern redcedar	65* 80 64+6 70* 46+5	60-70 76-85 56-72 66-75 42-52	Slight Slight to Moderate Moderate	Slight to Moderate Moderate	Slight to Moderate	Loblolly pine Virginia pine Shortleaf pine Eastern redcedar	3c2
silty clay, 5 to 20% slopes severely eroded	<u>Loblolly pine</u> Virginia pine Eastern redcedar	70* 60* 40*	66-75 56-65 36-45	Slight Severe	Moderate Severe	Severe	Loblolly pine Virginia pine Eastern redcedar	4c3e
very rocky silty clay, 5 to 30% slopes				Slight	Severe	Severe		4x3
<u>Tarklin</u> silt loam to cherty silt loam, 0 to 20% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine Shortleaf pine Virginia pine	90* 70* 80* 70* 70*	86-95 66-75 76-85 66-75 66-75	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine	3o7
<u>Teas</u> loam, 5 to 20% slopes	Upland oaks <u>Shortleaf pine</u> <u>Virginia pine</u> Loblolly pine White pine	60* 60* 60* 70* 70*	56-65 56-65 56-65 66-75 66-75	Slight Severe	Slight Moderate	Moderate to Severe Severe	Loblolly pine Shortleaf pine Virginia pine White pine	4f3
20 to 45% slopes north and east aspect	Shortleaf pine <u>Virginia pine</u> Loblolly pine	50 50 60	45-55 45-55 55-65	Moderate	Moderate	Severe	Loblolly pine Virginia pine	5f3
<u>Tellico</u> loam to fine sandy loam, 2 to 20% slopes	Upland oaks <u>Shortleaf pine</u> <u>Virginia pine</u> Loblolly pine White pine	70* 68 76 80* 80*	66-75 61-75 67-85 76-85 76-85	Slight	Slight	Slight	Shortleaf pine Virginia pine Loblolly pine White pine	3o7
20 to 30% slopes	<u>Yellow-poplar</u>	90*	86-95	Moderate	Moderate	Slight		3r8
clay loam to fine sandy clay loam, 12 to 30% slopes, severely eroded	Shortleaf pine <u>Virginia pine</u> White pine Loblolly pine	60* 60* 70* 70*	56-65 56-65 66-75 66-75	Slight to Moderate Severe	Moderate to Severe	Moderate	Virginia pine Loblolly pine White pine	4c3e
<u>Tilsit</u> silt loam, 2 to 12% slopes	<u>Yellow-poplar</u> Upland oaks <u>Shortleaf pine</u> Virginia pine Loblolly pine White pine	90* 69+12 70+8 72 76 80*	86-95 56-84 60-75 71-73 70-82 76-83	Slight	Slight	Slight	Shortleaf pine Virginia pine Loblolly pine White pine	3o7
<u>Townley</u> silt loam to clay loam, 2 to 20% slopes	Loblolly pine <u>Shortleaf pine</u> Virginia pine	75+5 59+5 70+6	68-90 50-65 62-77	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1
<u>Tupelo</u> silt loam to loam, 0 to 5% slopes	Yellow-poplar Upland oaks Loblolly pine <u>Sweetgum</u>	90* 70* 80* 80*	86-95 66-75 76-85 76-85	Slight	Moderate	Moderate	Loblolly pine	3w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Cumberland Plateau and Southern Appalachians

Page 15 of 16

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Tyler</u> silt loam to loam, 0 to 5% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Loblolly pine Sweetgum	90* 70* 79 70*	86-95 66-75 75-82 66-75	Slight	Severe	Severe	Loblolly pine	3w9
<u>Upshur</u> silt loam to silty clay loam 2 to 20% slopes	<u>Upland oaks</u> <u>Shortleaf pine</u> Virginia pine White pine Eastern redcedar	60* 60* 60* 70* 40*	56-65 56-65 56-65 66-75 36-45	Slight	Moderate	Moderate	Shortleaf pine Virginia pine White pine	4c2
clay, 5 to 20% slopes, eroded	<u>Virginia pine</u> White pine Eastern redcedar	50* 60* 30*	46-55 46-55 26-35	Slight to Moderate	Moderate	Moderate	Virginia pine Eastern redcedar	5c3
<u>Waynesboro</u> loam to gravelly loam, 2 to 20% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Loblolly pine Shortleaf pine <u>Virginia pine</u> White pine Black-walnut	90* 75* 80* 70* 77-76 80*	86-95 70-80 76-85 66-76 69-86 76-85	Slight	Slight	Slight	Yellow-poplar Black walnut Loblolly pine Shortleaf pine Virginia pine White pine	3o7
20 to 30% slopes								3r8
clay loam to gravelly clay loam, 5 to 30% slopes, severely eroded	Loblolly pine Shortleaf pine <u>Virginia pine</u> White pine	70* 60* 65* 70*	66-75 56-65 60-70 66-75	Slight to Moderate	Moderate to Severe	Moderate to Severe	Loblolly pine Virginia pine	4c3a
<u>Weaver</u> silt loam, 0 to 2% slopes	<u>Yellow-poplar</u> Upland oaks Loblolly pine Sweetgum White pine Black walnut	100* 80* 90* 90* 90* -	96-105 76-85 86-95 86-95 86-95 -	Slight	Moderate	Slight	Yellow-poplar Black walnut Loblolly pine White pine	2w8
<u>Wehadkee</u> silt loam to fine sandy loam 0 to 2% slopes	<u>Yellow-poplar</u> Upland oaks Bottomland oaks <u>Sweetgum</u> White pine	90* 70* 90* 90* 90*	86-95 66-75 86-95 86-95 86-95	Slight	Severe	Severe	White pine Loblolly pine Sweetgum	2w9
<u>Wellston</u> silt loam to fine sandy loam 2 to 20% slopes	<u>Upland oaks</u> <u>Shortleaf pine</u> Virginia pine Loblolly pine White pine	70* 70* 70* 80* 80*	66-75 66-75 66-75 76-85 76-85	Slight	Slight	Slight	Loblolly pine Shortleaf pine Virginia pine White pine	3o7
<u>Whitesburg</u> silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Bottomland oaks Sweetgum White pine Black locust	95* 75* 90* 90* 90* -	90-100 70-80 86-95 86-95 86-95 -	Slight	Moderate	Moderate	White pine Black locust Loblolly pine	2w8
<u>Whitwell</u> loam to silt loam, 0 to 5% slopes	<u>Yellow-poplar</u> <u>Upland oaks</u> Sweetgum Loblolly pine White pine	95* 75* 90* 90* 90*	90-100 70-80 86-95 86-95 86-95	Slight	Moderate	Moderate	Loblolly pine White pine Sweetgum	2w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Cumberland Plateau and Southern Appalachians

Page 16 of 16

Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and a brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the soils within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 1 of 6

Cumberland Plateau and Southern Appalachians

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
2w7 Loamy soils with high potential productivity; no serious management problems; suitable for needleleaf or broadleaf trees.	<u>Alleghany</u> silt loam to fine sandy loam, 2-20% slopes <u>Barbourville</u> silt loam to fine sandy loam, 0-12% slopes <u>Camp</u> silt loam, 0-12% slopes <u>Caylor</u> silt loam to loam, 2-20% slopes <u>Chagrin</u> silt loam, 0-5% slopes <u>Comus</u> loam to sandy loam, 0-5% slopes <u>Egans</u> silt loam to silty clay loam, 0-5% slopes <u>Emory</u> silt loam, 0-5% slopes <u>Ennis</u> silt loam and cherty silt loam, 0-5% slopes <u>Etowah</u> silt loam to cherty silty clay loam, 2-12% slopes <u>Greendale</u> silt loam and cherty silt loam, 0-12% slopes <u>Humphreys</u> silt loam, 2-20% slopes <u>Huntington</u> silt loam, 0-5% slopes <u>Neubert</u> loam, 0-12% slopes <u>Pope</u> silt loam to gravelly fine sandy loam, 0-5% slopes <u>Sequatchie</u> silt loam to gravelly fine sandy loam, 2-20% slopes <u>Staser</u> loam to gravelly fine sandy loam, 0-5% slopes	Yellow-poplar Red oaks White oaks White pine White ash Black cherry Black walnut Sugar maple Shortleaf pine Loblolly pine	100 80 70 90 - - - - 80 90	Yellow-poplar White pine Black walnut Loblolly pine
2w8 Seasonally wet soils with high potential productivity; moderate equipment restrictions and slight to moderate seedling mortality; suitable for broadleaf or needleleaf trees.	<u>Chewacla</u> silt loam to fine sandy loam, 0-5% slopes <u>Codorus</u> silt loam to fine sandy loam, 0-5% slopes <u>Cotaco</u> loam to fine sandy loam, 2-12% slopes <u>Hambleton</u> silt loam to fine sandy loam, 0-5% slopes <u>Lindsdale</u> silt loam and cherty silt loam, 0-5% slopes <u>Lobelville</u> silt loam and cherty silt loam, 0-5% slopes <u>Newark</u> silt loam, 0-2% slopes <u>Philo</u> silt loam to fine sandy loam, 0-5% slopes <u>Weaver</u> silt loam, 0-2% slopes <u>Whitesburg</u> silt loam, 0-5% slopes <u>Whitwell</u> loam to silt loam, 0-5% slopes	Yellow-poplar Red oaks White oaks Loblolly pine Shortleaf pine Black walnut White ash	100 80 80 90 80 - -	Yellow-poplar Loblolly pine Black walnut White pine
2w9 Excessively wet soils with high potential productivity; severe equipment restrictions and moderate to severe seedling mortality; suitable for broadleaf or needleleaf trees.	<u>Atkins</u> silt loam to fine sandy loam, 0-2% slopes <u>Dunning</u> silty clay loam to silty clay, 0-5% slopes <u>Elkins</u> silt loam, 0-2% slopes <u>Lee</u> silt loam and cherty silt loam, 0-5% slopes <u>Melvin</u> silt loam, 0-2% slopes <u>Mullins</u> silt loam, 0-2% slopes <u>Purdy</u> silt loam to fine sandy loam, 0-5% slopes <u>Robertsville</u> silt loam, 0-2% slopes <u>Wehadkee</u> silt loam to fine sandy loam, 0-2% slopes	Loblolly pine Sweetgum Red oaks White oaks Sycamore Red maple	90 90 80 80 - -	Loblolly pine Sycamore Sweetgum

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 2 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
3o7 Loamy soils with moderately high productivity; no serious management problems; suitable for needleleaf or broadleaf trees.	<u>Albertville</u> fine sandy loam to loam, 2-12% slopes <u>Alcoa</u> loam to silt loam, 2-20% slopes <u>Allen</u> fine sandy loam to clay loam, 2-20% slopes <u>Apison</u> clay loam to fine sandy loam, 2-20% slopes <u>Bolton</u> loam to silt loam, 5-20% slopes <u>Bradyville</u> silt loam to silty clay loam, 0-20% slopes <u>Capshaw</u> silt loam to loam, 0-12% slopes <u>Captina</u> silt loam, 0-12% slopes <u>Christian</u> silt loam to silty clay loam, 2-20% slopes <u>Claiborne</u> silt loam and cherty silt loam, 5-20% slopes <u>Clymer</u> silt loam to sandy clay, 2-20% slopes <u>Cumberland</u> silt loam to silty clay loam, 2-20% slopes <u>Decatur</u> silt loam and gravelly silt loam, 2-20% slopes <u>Dewey</u> silt loam, 2-20% slopes <u>Dunmore</u> silt loam to silty clay loam, 2-20% slopes <u>Farragut</u> silt loam to silty clay loam, 2-20% slopes <u>Fullerton</u> silt loam and cherty silt loam, 5-20% slopes <u>Gilpin</u> silt loam to loam, 5-20% slopes <u>Groseclose</u> silt loam to silty clay loam, 2-20% slopes <u>Holston</u> loam and gravelly loam, 2-20% slopes <u>Jefferson</u> silt loam to fine sandy loam, 2-20% slopes <u>Landisburg</u> silt loam and cherty silt loam, 0-20% slopes <u>Leadvale</u> silt loam, 2-20% slopes <u>Minvale</u> silt loam and cherty silt loam, 2-20% slopes <u>Monongahela</u> silt loam to gravelly loam, 0-12% slopes <u>Muse</u> silt loam to silty clay loam, 5-20% slopes <u>Nolichucky</u> silt loam to gravelly fine sandy loam, 2-20% slopes <u>Sequoia</u> silt loam to silty clay loam, 2-20% slopes <u>Shouns</u> silt loam to silty clay loam, 2-20% slopes <u>Tarklin</u> silt loam and cherty silt loam, 0-20% slopes <u>Tellico</u> loam to fine sandy loam, 2-20% slopes <u>Tilsit</u> silt loam, 0-12% slopes <u>Waynesboro</u> loam and gravelly loam, 2-20% slopes <u>Wellston</u> silt loam to fine sandy loam, 2-20% slopes	<u>Loblolly</u> pine <u>Yellow-poplar</u> <u>Virginia</u> pine <u>Shortleaf</u> pine <u>White</u> pine <u>Red</u> oaks <u>White</u> oaks <u>Black</u> walnut	80 90 70 70 80 70 70 -	<u>Yellow-poplar</u> <u>Loblolly</u> pine <u>Shortleaf</u> pine <u>White</u> pine <u>Black</u> walnut <u>Virginia</u> pine

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 3 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>3r8</u> Loamy soils with moderately high productivity on slopes greater than 20%; moderate erosion hazard and equipment limitations; suitable for needleleaf and/or broadleaf trees.	<u>Allen</u> fine sandy loam to clay loam, 20-45% slopes <u>Bolton</u> loam to silt loam, 20-45% slopes <u>Claiborne</u> silt loam and cherty silt loam, 20-30% slopes <u>Decatur</u> silt loam and gravelly silt loam, 20-30% slopes <u>Dewey</u> silt loam, 2-20% slopes <u>Dunmore</u> silt loam to silty clay loam, 20-30% slopes <u>Fullerton</u> silt loam to cherty silt loam, 20-45% slopes <u>Gilpin</u> silt loam to loam, 20-45% slopes <u>Groseclose</u> silt loam to silty clay loam, 20-30% slopes <u>Jefferson</u> silt loam to fine sandy loam, 20-30% slopes <u>Nolichucky</u> silt loam to gravelly fine sandy loam, 20-30% slopes <u>Shouns</u> silt loam to silty clay loam, 20-30% slopes <u>Tellico</u> loam to fine sandy loam, 20-30% slopes <u>Waynesboro</u> loam to gravelly loam, 20-30% slopes	Yellow-poplar Shortleaf pine Virginia pine Red oaks White oaks Black walnut Black cherry White ash Eastern redcedar	90 70 70 70 70 - - - 50+	Yellow-poplar Loblolly pine White pine Virginia pine Shortleaf pine Black walnut
<u>3x8</u> Stony or rocky soils with moderately high potential productivity; moderate equipment limitations and slight to moderate erosion hazard; suitable for needleleaf and/or broadleaf trees.	<u>Allen</u> stony fine sandy loam to stony loam, 12-45% slopes <u>Dunmore</u> very rocky silt loam to silty clay loam, 5-30% slopes <u>Jefferson</u> cobble loam to very stony loam, 5-30% slopes	Yellow-poplar Shortleaf pine Virginia pine Loblolly pine Black walnut Red oaks White oaks Sugar maple Black cherry Eastern redcedar	90 70 70 80 - 70 - - - 50-60	Yellow-poplar Shortleaf pine Loblolly pine Virginia pine White pine Black walnut
<u>3f8</u> Fragmental soils with moderately high productivity; moderate seedling mortality and slight to moderate erosion hazard and equipment limitations; suitable for needleleaf and/or broadleaf trees.	<u>Bodine</u> cherty silt loam, 5-20% slopes on all aspects and 20-40% slopes on north aspects <u>Elliber</u> cherty silt loam, 12-20% slopes on all aspects and 20-40% slopes on north aspects <u>Litz</u> silt loam to loam, 5-30% slopes	Shortleaf pine Yellow-poplar Red oaks White oaks Virginia pine	60 90 70	Loblolly pine Shortleaf pine
<u>3c2</u> Clayey soils with moderate productivity, moderate seedling mortality and slight to moderate equipment restrictions; best suited for needleleaf trees.	<u>Conasauga</u> silt loam, 2-20% slopes <u>Needmore</u> silt loam, 2-12% slopes <u>Talbot</u> silt loam to silty clay loam, 2-20% slopes	Shortleaf pine Virginia pine Loblolly pine Eastern redcedar Red oaks	70 70 70 50 70	Loblolly pine Virginia pine
<u>3s9</u> Sandy soils with moderate productivity; severe seedling mortality and moderate equipment limitations; suitable for needleleaf and/or broadleaf trees.	<u>Bruno</u> loamy fine sand to sandy loam, 0-5% slopes	Red oaks White oaks Sweetgum Sycamore Loblolly pine	80 80 80 90 80	Loblolly pine White pine Sycamore

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 4 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
		(3)	(4)	
3w8 Seasonally wet soils with moderate productivity; moderate equipment limitations and slight to moderate seedling mortality; suitable for broadleaf and/or needleleaf trees.	<u>Beason</u> silt loam, 0-2% slopes <u>Johnsbury</u> silt loam, 0-5% slopes <u>Taft</u> silt loam, 2-5% slopes <u>Tupelo</u> silt loam to loam, 0-5% slopes <u>Wolftever</u> silt loam, 0-5% slopes	Yellow-poplar Sweetgum White oaks Red oaks Loblolly pine Red maple Shortleaf pine	90 80 70 70 80 - 70	Loblolly pine Sweetgum Yellow-poplar
3w9 Excessively wet soils with moderate productivity; severe equipment restrictions and moderate to severe seedling mortality; suitable for broadleaf and/or needleleaf trees.	<u>Dowellton</u> silt loam, 0-5% slopes <u>Lickdale</u> silt loam to silty clay loam, 0-5% slopes <u>Tyler</u> silt loam to loam, 0-5% slopes	Red oaks Sweetgum Loblolly pine Red maple	70 80 80 -	Loblolly pine Sweetgum
4o1 Loamy soils with moderate productivity; no serious management problems; best suited for needleleaf trees.	<u>Crossville</u> loam, 2-12% slopes <u>Enders</u> silt loam to silty clay loam, 2-20% slopes <u>Hartsell</u> loam to fine sandy loam, 2-20% slopes <u>Linker</u> loam to fine sandy loam, 0-20% slopes <u>Muskingum</u> silt loam to fine sandy loam, 2-20% slopes <u>Townley</u> silt loam to clay loam, 2-20% slopes	Shortleaf pine Virginia pine Loblolly pine White pine	60 60 70 70	Shortleaf pine Virginia pine Loblolly pine
4r2 Loamy soils on steep slopes with moderate productivity; moderate equipment restrictions; best suited for needleleaf trees.	<u>Enders</u> silt loam to silty clay loam, 20-30% slopes <u>Fullerton</u> silt loam on south aspects, 20-45% slopes <u>Gilpin</u> silt loam on south aspects, 20-45% slopes <u>Muskingum</u> silt loam to fine sandy loam, 20-45% slopes on north aspects	Shortleaf pine Virginia pine Loblolly pine Eastern redcedar	60 60 70 40	Loblolly pine Virginia pine
4c2 Clayey soils with moderate productivity; moderate equipment limitations and seedling mortality; slight to moderate erosion hazard; best suited for needleleaf trees.	<u>Albertville</u> fine sandy clay loam to clay, 2-12% slopes, eroded <u>Carbo</u> silt loam to silty clay loam, 0-20% slopes <u>Colbert</u> silt loam to silty clay loam, 0-20% slopes <u>Upshur</u> silt loam to silty clay loam, 2-20% slopes	Loblolly pine Shortleaf pine Virginia pine Eastern redcedar	70 60 60 40	Loblolly pine Virginia pine Eastern redcedar
4d3 Shallow soils with moderate productivity; moderate to severe seedling mortality and slight to moderate erosion hazard and equipment restrictions; best suited for needleleaf trees.	<u>Armuchee</u> silt loam, 2-50% slopes <u>Barfield</u> silty clay loam to clay loam, 1-30% slopes <u>Dandridge</u> silt loam or shaly silt loam, 5-20% slopes <u>Montevallo</u> shaly silt loam, 2-20% slopes on all aspects and 20-45% slopes on north aspects <u>Ramsey</u> loam to fine sandy loam, 5-20% slopes on all aspects and 20-70% slopes on north aspects	Shortleaf pine Virginia pine Eastern redcedar Loblolly pine	60 60 40	Loblolly pine Virginia pine Eastern redcedar

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 5 of 6

Comberland Plateau and Southern Appalachians

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
4f3 Fragmental soils with moderate productivity; moderate to severe erosion hazard, equipment restrictions and seedling mortality; best suited for needleleaf trees.	<p>(1)</p> <p>(2)</p> <p><u>Bodine</u> cherty silt loam, 20-40% slopes on south aspect and ridge tops</p> <p><u>Elliber</u> cherty silt loam, 20-40% slopes on south aspect and ridge tops</p> <p><u>Lehew</u> loam to fine sandy loam 5-20% slopes on all aspects and 20-45% slopes on north aspects</p> <p><u>Teas</u> loam, 5-20% slopes on all aspects, and 20-45% slopes on north aspects</p>	<p>(3)</p> <p>Virginia pine Eastern redcedar Red oaks Shortleaf pine White oaks</p>	<p>(4)</p> <p>60 40 60 60 60</p>	Virginia pine Eastern redcedar
4x3 Stony or rocky soils with moderate productivity; moderate to severe equipment restrictions, seedling mortality and equipment restrictions; best suited for needleleaf trees	<p>(1)</p> <p>(2)</p> <p><u>Ramsey</u> stony loam, 20-70% slopes on north aspects</p> <p><u>Talbott</u> very rocky silty clay, 5-30% slopes</p>	<p>(3)</p> <p>Virginia pine Shortleaf pine Loblolly pine Red oaks White pine</p>	<p>(4)</p> <p>60 60 70 60 70</p>	Virginia pine Loblolly pine White pine
4c3e Severely eroded soils with moderate productivity; moderate to severe erosion hazard, equipment restrictions, and seedling mortality; best suited for needleleaf trees.	<p>(1)</p> <p>(2)</p> <p><u>Bolton</u> silty clay loam to clay loam, 12-30% slopes, severely eroded</p> <p><u>Christian</u> clay loam to clay, 5-20% slopes severely eroded</p> <p><u>Claiborne</u> silty clay loam, 5-30% slopes severely eroded</p> <p><u>Conasauga</u> silty clay, 5-20% slopes severely eroded</p> <p><u>Cumberland</u> silty clay or clay 5-20% slopes severely eroded</p> <p><u>Decatur</u> silty clay loam, 5-30% slopes, severely eroded</p> <p><u>Dewey</u> silty clay loam, 50-30% slopes, severely eroded</p> <p><u>Dunmore</u> clay, 5-30% slopes, severely eroded</p> <p><u>Farragut</u> clay, 5-20% slopes, severely eroded</p> <p><u>Fullerton</u> cherty silty clay loam, 12-45% slopes, severely eroded</p> <p><u>Groseclose</u> clay, 5-30% slopes severely eroded</p> <p><u>Litz</u> shaly silty clay loam, 5-20% slopes, severely eroded</p> <p><u>Muse</u> silty clay, 5-20% slopes, severely eroded</p> <p><u>Needmore</u> silty clay loam, 2-12% slopes, severely eroded</p> <p><u>Sequoia</u> silty clay to clay, 2-20% slopes, severely eroded</p> <p><u>Talbott</u> silty clay, 5-20% slopes, severely eroded</p> <p><u>Tellico</u> clay loam to fine sandy clay loam, 12-30% slopes, severely eroded</p> <p><u>Waynesboro</u> clay loam, 5-30% slopes, severely eroded</p>	<p>(3)</p> <p>Shortleaf pine Virginia pine Loblolly pine</p>	<p>(4)</p> <p>60 60 70</p>	Loblolly pine Virginia pine Shortleaf pine

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 6 of 6

Cumberland Plateau and Southern Appalachians					
Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting	
		Tree Species	Site Class		
5d3 Shallow soils with low productivity, moderate to severe erosion hazard, equipment restrictions and seedling mortality; best suited for needleleaf trees.	(1)	(2)	(3)	(4)	(5)
		<u>Armuchee</u> silty clay loam to silty clay, 5-20% slopes, severely eroded <u>Dandridge</u> silty clay loam, 5-45% slopes, severely eroded <u>Montevallo</u> shaly silt loam, 20-45% slopes on south aspects <u>Ramsey</u> loam to fine sandy loam, 20-70% slopes on south aspects	Eastern redcedar Virginia pine Shortleaf pine	30 50 50	Eastern redcedar
5f3 Fragmental soils with low productivity; moderate to severe equipment restrictions and seedling mortality; best suited for needleleaf trees.		<u>Lehew</u> loam to fine sandy loam 20-45% slopes on south aspect <u>Teas</u> loam, 20-45% slopes on south and west aspects	Loblolly pine Shortleaf pine Eastern redcedar Virginia pine	60 50 30 50	Virginia pine Loblolly pine Shortleaf pine
5x3 Stony or rocky soils with low productivity, moderate to severe equipment restrictions and seedling mortality; best suited for needleleaf trees		<u>Barfield</u> very rocky clay loam, 2-30% slopes <u>Carbo</u> very rocky silty clay to clay, 0-30% slopes <u>Colbert</u> very rocky silty clay to clay, 0-30% slopes <u>Muskingum</u> stony loam, 5-45% slopes <u>Ramsey</u> stony or very stony loam, 20-70% slopes on south aspects	Eastern redcedar	30	Eastern redcedar
5c3 Clayey soils with low productivity; moderate to severe erosion hazard, equipment restrictions and seedling mortality; best suited for needleleaf trees.		<u>Carbo</u> silty clay to clay, 0-20% slopes <u>Colbert</u> silty clay to clay, 5-20% slopes <u>Enders</u> silty clay to clay, 5-20% slopes, eroded <u>Upshur</u> clay, 5-20% slopes, eroded	Eastern redcedar Virginia pine Shortleaf pine	30 50 50	Eastern redcedar Virginia pine Loblolly pine
5r3 Loamy soils on steep slopes with low productivity; moderate to severe erosion hazard and equipment restrictions; best suited for needleleaf trees.		<u>Muskingum</u> silt loam to loam, 20-45% slopes on south aspects	Shortleaf pine Loblolly pine Virginia pine White pine	50 60 50 60	Virginia pine White pine Shortleaf pine

